

## Vane Type Double Pump

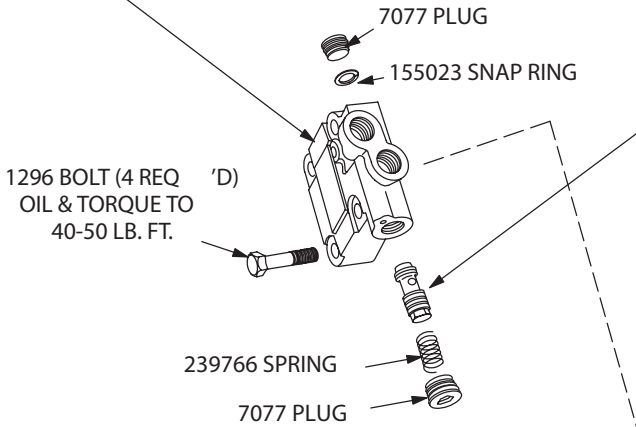
2520VQ Series - 20 Design

AX438766834847en-000101

| MODEL              | COVER TYPE      | COVER S/A |
|--------------------|-----------------|-----------|
| 252*VQ*A/F*-*20    | 4-BOLT          | 250824    |
| 252*VQ*C/E*-*20    | STRAIGHT THREAD | 252504    |
| 252*VQ*C/E*-*2*20  | FLOW CONTROL    | 257560    |
| 252*VQ*C/E*-*4*20  |                 | 257561    |
| 252*VQ*C/E*-*6*20  |                 | 257562    |
| 252*VQ*C/E*-*7*20  |                 | 257563    |
| 252*VQ*C/E*-*8*20  |                 | 257564    |
| 252*VQ*C/E*-*10*20 |                 | 257565    |
| 252*VQ*C/E*-*12*20 |                 | 257999    |

| MODEL        | RELIEF VALVE SETTING (PSI) | RELIEF VALVE S/A |
|--------------|----------------------------|------------------|
| 252*VQ***C20 | 750                        | 232794           |
| 252*VQ***D20 | 1000                       | 232795           |
| 252*VQ***E20 | 1250                       | 232796           |
| 252*VQ***F20 | 1500                       | 232797           |
| 252*VQ***G20 | 1750                       | 232798           |
| 252*VQ***H20 | 2000                       | 232799           |
| 252*VQ***J20 | 2250                       | 233019           |
| 252*VQ***K20 | 2500                       | 233020           |

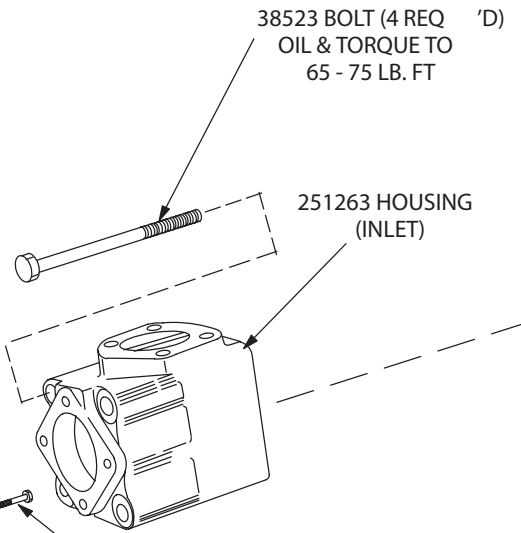
\*\*20VQ MODELS  
ONLY NOT FOR  
12 & 14 RING SIZES.



**\*NOTE**  
INSTALL INTO COVER BEFORE  
INSTALLATION OF CARTRIDGE KIT.

**NOTE**  
BRONZE FACES MUST  
BE INSTALLED TOWARD  
THE ROTOR.

TORQUE TO  
30 ± 5 LB. IN.



| MODEL                                     | ▲<br>BACK-<br>UP<br>RING | ▲<br>"O"<br>RING | ▲<br>SEAL<br>RING | ▲<br>"O"<br>RING | OUTLET<br>SUPPORT<br>PLATE | ▲SEAL<br>PACK<br>(4 REQ 'D) | ■FLEX-<br>SIDE<br>PLATE<br>KIT | ROTOR  | VANE KIT<br>(10 VANES &<br>10 INSERTS) | RING   | INLET<br>SUPPORT<br>PLATE | PIN (2<br>REQ 'D) | SCREW<br>(2<br>REQ 'D) | CART.<br>KIT | F3<br>CART.<br>KIT |        |        |        |
|-------------------------------------------|--------------------------|------------------|-------------------|------------------|----------------------------|-----------------------------|--------------------------------|--------|----------------------------------------|--------|---------------------------|-------------------|------------------------|--------------|--------------------|--------|--------|--------|
| THESE PARTS ARE INCLUDED IN CARTRIDGE KIT |                          |                  |                   |                  |                            |                             |                                |        |                                        |        |                           |                   |                        | ↓            | ↓                  |        |        |        |
| 2*20*** 5**                               | 588506                   | 154026           | 419672            | 154090           | 419500                     | 433762<br>S/A               | 923955                         | 402690 | 922741                                 | 333624 | 419502                    | 422206            | 416426                 | 417053       | 421588             |        |        |        |
| 2*20*** 8**                               |                          |                  |                   |                  |                            |                             |                                |        |                                        | 333625 |                           |                   |                        | 417054       | 421589             |        |        |        |
| 2*20*** 9**                               |                          |                  |                   |                  |                            |                             |                                |        |                                        | 374799 |                           |                   |                        | 423096       | 423097             |        |        |        |
| 2*20***11*                                |                          |                  |                   |                  |                            |                             |                                |        |                                        | 333626 |                           |                   |                        | 416427       | 421590             |        |        |        |
| 2*20***12*                                |                          |                  |                   |                  |                            |                             |                                | 403539 | 922743                                 | 353901 | 419501                    |                   |                        | 416428       | 421591             |        |        |        |
| 2*20***14*                                |                          |                  |                   |                  |                            |                             |                                |        |                                        | 353902 |                           |                   |                        | 416429       | 421592             |        |        |        |
| 2*21*** 5**◇                              |                          |                  |                   |                  |                            |                             |                                |        |                                        | 428698 |                           |                   |                        | 922741       | 333624             | 419502 | 428700 | 428707 |
| 2*21*** 8**◇                              |                          |                  |                   |                  |                            |                             |                                |        |                                        |        |                           |                   |                        |              | 333625             |        | 428701 | 428708 |
| 2*21*** 9**◇                              |                          |                  |                   |                  |                            |                             |                                | 374799 | 428702                                 |        | 428709                    |                   |                        |              |                    |        |        |        |
| 2*21***11**◇                              |                          |                  |                   |                  |                            |                             |                                | 428699 | 922743                                 | 333626 | 419501                    |                   |                        | 428703       | 428710             |        |        |        |
| 2*21***12**◇                              |                          |                  |                   |                  |                            |                             |                                |        |                                        | 353901 |                           |                   |                        | 428704       | 428711             |        |        |        |
| 2*21***14*◇                               |                          |                  |                   |                  |                            |                             |                                |        |                                        | 353902 |                           |                   |                        | 428705       | 428712             |        |        |        |

◇ VQ REPLACEMENT CARTRIDGES FOR THE 2521 SERIES.

● ASSEMBLE SEAL FLUSH TO PILOT FACE WITH SPRING FACING INWARD AS SHOWN.

○ ASSEMBLE SEAL WITH SPRING TOWARD BEARING.

USE THE REPLACEMENT PARTS SHOWN ON THIS DRAWING TO SERVICE A 2520V-10/12 UNIT. CARTRIDGES MUST BE REPLACED AS A KIT. INDIVIDUAL PARTS OF A CARTRIDGE ARE NOT INTERCHANGEABLE.

□ WIPE O.D. OF SEAL WITH OIL BEFORE PRESSING INTO BODY. APPLY GREASE TO SEAL I.D. BEFORE INSTALLATION OF SHAFT.

⊖ INCLUDED IN FOOT BRACKET KIT FB-B-10

| SHAFT NO. | TYPE       | SECONDARY SHAFT SEAL | 2*20 SHAFT | 2*21 SHAFT | KEY |
|-----------|------------|----------------------|------------|------------|-----|
| 1         | STR. KEYED | —                    | 254964     | 252737     | 955 |
| 11        | SPLINE     | —                    | 254848     | 252736     | —   |
| 123       | SPLINE     | 429283               | 413433     | —          | —   |

| MODEL            | LOCK RING | RETAINING RING | BRG.   |
|------------------|-----------|----------------|--------|
| 252*VQ*****_**20 | 191400    | 120128         | 1705   |
| 252*VQ*****_**20 |           |                | 232750 |

**NOTE**  
BRONZE FACES MUST BE INSTALLED TOWARD THE ROTOR.

TORQUE TO  
45 ± 5 LB. IN.

△●□ SECONDARY SHAFT SEAL (SEE TABLE)

△□○ 394976 PRIMARY SHAFT SEAL

190362 WASHER

| MODEL            | BODY   | TYPE    |
|------------------|--------|---------|
| 2*2*VQ*A/E*_**20 | 942353 | 4-BOLT  |
| 2*2*VQ*C/F*_**20 | 942378 | STR THD |

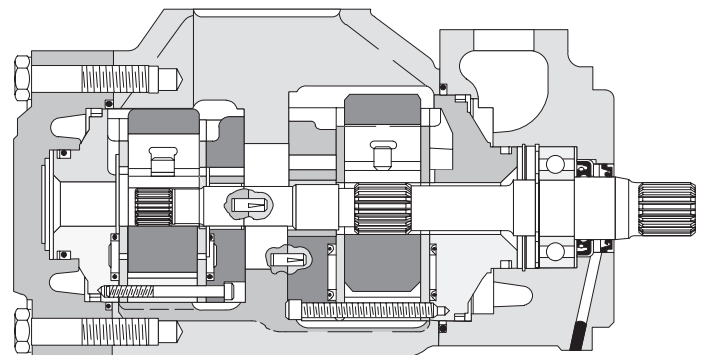
#### STD/F3 SEAL KITS

| △ STD SINGLE SHAFT | △▲ STD DOUBLE-SHAFT | F3 SINGLE SHAFT | F3 DOUBLE SHAFT |
|--------------------|---------------------|-----------------|-----------------|
| 920040             | 920041              | 920042          | 920043          |

| MODEL                                     | SCREW (2 REQ 'D) | PIN (2 REQ 'D) | INLET SUPPORT PLATE | ■▲ SEAL PACK (4 REQ 'D) | ■ FLEX-SIDE PLATE KIT | ROTOR  | VANE KIT (10 VANES & 10 INSERTS) | RING   | OUTLET SUPPORT PLATE | ▲ "O" RING | *▲ SEAL RING | ▲ "O" RING | ▲ BACK-UP RING | CART. KIT | F3 CART. KIT |
|-------------------------------------------|------------------|----------------|---------------------|-------------------------|-----------------------|--------|----------------------------------|--------|----------------------|------------|--------------|------------|----------------|-----------|--------------|
| THESE PARTS ARE INCLUDED IN CARTRIDGE KIT |                  |                |                     |                         |                       |        |                                  |        |                      |            |              |            |                |           |              |
| 2*2*VQ12                                  | 413834           | 422207         | 430805 S/A          | 433764 S/A              | 923956                | 270597 | 922710                           | 326984 | 419079               | 154095     | 416973       | 154078     | 588507         | 416439    | 421570       |
| 2*2*VQ14                                  |                  |                |                     |                         |                       |        |                                  | 326985 |                      |            |              |            |                | 416440    | 421571       |
| 2*2*VQ17                                  |                  |                |                     |                         |                       |        |                                  | 326986 |                      |            |              |            |                | 416441    | 421572       |
| 2*2*VQ19                                  |                  |                |                     |                         |                       |        |                                  | 326987 |                      |            |              |            |                | 421232    | 421573       |
| 2*2*VQ21                                  |                  |                |                     |                         |                       |        |                                  | 326988 |                      |            |              |            |                | 416442    | 421574       |

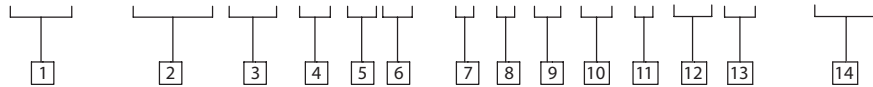
\*INSTALL SEAL RING IN BODY OR COVER, THEN INSTALL CARTRIDGE KIT.

■ **NOTE** : FLEX SIDEPLATE KITS INCLUDE (4) F3 SEAL PACKS.



# Model Code

(F3) - 2520 VQ \*\* A \*\* - \* 1 \*\* \*\* \* 20 (\*) - 28 \*



**1** Viton seals  
(Omit if not required.)

**2** Series designation

2520VQ, Double Pump  
2620VQ, Double Pump

**3** Intra-vane pump

**4** USgpm capacity  
(Shaft end pump)

SAE rating 1200 rpm -100 psi (7 bar)

|               |               |
|---------------|---------------|
| 12 - 12 USgpm | 19 - 19 USgpm |
| 14 - 14 USgpm | 21 - 21 USgpm |
| 17 - 17 USgpm |               |

**5** SAE port connections

Models Without Flow Control

| Code | Inlet            | Outlet #1        | Outlet #2        |
|------|------------------|------------------|------------------|
| A -  | 4 bolt<br>flange | 4 bolt<br>flange | 4 bolt<br>flange |
| C -  | 4 bolt<br>flange | SAE St.<br>Thd.  | SAE St.<br>Thd.  |
| E -  | 4 bolt<br>flange | 4 bolt<br>flange | SAE St.<br>Thd.  |
| F -  | 4 bolt<br>flange | 4 bolt<br>flange | SAE St.<br>Thd.  |

Models With Flow Control

| Code | Inlet            | Outlet #1        | Outlet #2       | Tank Return     |
|------|------------------|------------------|-----------------|-----------------|
| C -  | 4 bolt<br>flange | SAE St.<br>Thd.  | SAE St.<br>Thd. | SAE St.<br>Thd. |
| E -  | 4 bolt<br>flange | 4 bolt<br>flange | SAE St.<br>Thd. | SAE St.<br>Thd. |

**6** USgpm capacity  
(Cover end pump)

SAE rating 1200 rpm -100 psi (7 bar)

|             |               |
|-------------|---------------|
| 5 - 5 USgpm | 11 - 11 USgpm |
| 8 - 8 USgpm | 12 - 12 USgpm |
| 9 - 9 USgpm | 14 - 14 USgpm |

**7** Mounting

F - Foot (Single shaft seal)  
S - Flange (Double shaft seal)  
**Omitted** - Flange, single shaft seal assembly

**8** Shaft type

1- Straight with square key standard  
11- Splined  
123- Splined

**9** Outlet port positions  
(Viewed from cover end of pump)

With # 1 outlet opposite inlet:

AA - # 2 outlet - 135 ° CCW from inlet  
AB - # 2 outlet - 45 ° CCW from inlet  
AC - # 2 outlet - 45 ° CW from inlet  
AD - # 2 outlet - 135 ° CW from inlet

With # 1 outlet 90 ° CCW from inlet:

BA - # 2 outlet - 135 ° CCW from inlet  
BB - # 2 outlet - 45 ° CCW from inlet  
BC - # 2 outlet - 45 ° CW from inlet  
BD - # 2 outlet - 135 ° CW from inlet

**9** Outlet port positions continued  
(Viewed from cover end of pump)

With # 1 outlet inline with inlet:

CA - # 2 outlet - 135 ° CCW from inlet  
CB - # 2 outlet - 45 ° CCW from inlet  
CC - # 2 outlet - 45 ° CW from inlet  
CD - # 2 outlet - 135 ° CW from inlet

With # 1 outlet 90 ° CW from inlet:

DA - # 2 outlet - 135 ° CCW from inlet  
DB - # 2 outlet - 45 ° CCW from inlet  
DC - # 2 outlet - 45 ° CW from inlet  
DD - # 2 outlet - 135 ° CW from inlet

**10** Controlled flow rate  
(Models with flow control)

|             |               |
|-------------|---------------|
| 2 - 2 USgpm | 8 - 8 USgpm   |
| 4 - 4 USgpm | 10 - 10 USgpm |
| 6 - 6 USgpm | 12 - 12 USgpm |
| 7 - 7 USgpm |               |

**11** Relief valve setting

(Models with flow control)

|              |               |
|--------------|---------------|
| C - 750 PSI  | G - 1750 PSI  |
| D - 1000 PSI | H - 2000 PSI  |
| E - 1250 PSI | I - 2250 PSI  |
| F - 1500 PSI | J - 2500 PSI* |

\* 20V pump only (not for 12 & 14 ring sizes).

**12** Design

**13** Rotation

(Viewed from shaft end of pump)

L - Left hand (CCW rotation)  
**Omitted** - Right hand rotation

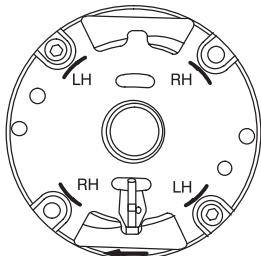
**14** Mounting

282 - SAE 2 -bolt mounting  
283 - Foot mounting

## NOTE

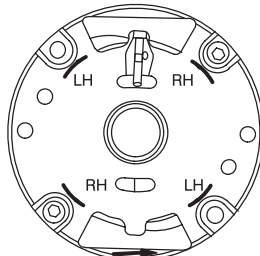
Standard right hand shaft rotation cartridges shown. Reverse for left hand rotation; refer to note.

Cover end cartridge R. H. Rotation



Sharp Edges of Vane Must Lead in Direction of Rotation

Shaft end cartridge R. H. Rotation



Sharp Edges of Vane Must Lead in Direction of Rotation

## NOTE

To reverse cartridge kit rotation, remove the two screws and reverse the location of the inlet support plate and the outlet support plate. Reinstall the two screws hand tight. Use pump cover to align all sections of the cartridge. Carefully remove the cover and tighten the screws.

## NOTE

For satisfactory service life of these components, use full flow filtration to provide fluid which meets ISO cleanliness code 16/13 or cleaner. Selections from pressure, return, and in-line filter series are recommended.

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